

Geometry Curriculum Bundle #6

Title	Suggested Dates
Conditional Statements, reasoning	December 7 – December 18 (10 Days)



Big Idea/Enduring Understanding	Guiding Questions
Proofs are the logical foundation of mathematics and build important thinking skills for all the sciences.	<ol style="list-style-type: none"> 1. What three basic types of proofs? 2. What are the structures of each type of proof? 3. Why are proofs important?

The resources included here provide teaching examples and/or meaningful learning experiences to address the District Curriculum. In order to address the TEKS to the proper depth and complexity, teachers are encouraged to use resources to the degree that they are congruent with the TEKS and research-based best practices. Teaching using only the suggested resources does not guarantee student mastery of all standards. Teachers must use professional judgment to select among these and/or other resources to teach the District Curriculum.

Knowledge & Skills with Student Expectations	District Specificity/Examples	Suggested Resources (See note above)	
<p>G.1 Geometric Structure. The student understands the structure of, and relationships within, an axiomatic system.</p> <p>G.1A The student develops an awareness of the structure of a mathematical system, connecting definitions, postulates, logical reasoning, and theorems.</p> <p>Teacher Note: Focus on Proofs</p>	<ul style="list-style-type: none"> • Use verbal descriptions to define geometric terms throughout the curriculum. • Use manipulatives and technology to draw conclusions and discover relationships about geometric shapes and their properties. • Use direct proofs in a limited amount, replace with other justification strategies. 	<p>Discovering: Ch. 2.1 – 2.4</p> <p>Holt Ch. 2 2.2, 2.4, 2.5 2.5 Proofs</p>	
<p>G.3 Geometric Structure. The student applies logical reasoning to justify and prove mathematical statements.</p> <p>G.3A The student determines the validity of a conditional statement, its converse, inverse, and contrapositive.</p>	<ul style="list-style-type: none"> • Make, interpret, and/or understand statements such as “If p, then q” as applied to attributes of geometric drawings, figures, etc. 	<p>Holt: 2.2, 2.4 (biconditional)</p>	<p>Geometry LTF: p. 82</p> <p>A&M: Ch 8 (Spring)</p>
<p>G.3 Geometric Structure. The student applies logical reasoning to justify and prove mathematical statements.</p> <p>G.3B The student constructs and justifies statements about geometric figures and their properties.</p>	<ul style="list-style-type: none"> • Develop conjectures in the form of a conditional statement 	<p>Holt: 2.2</p>	<p>A&M: Ch 8 (Spring)</p>

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<p>G.3 Geometric Structure. The student applies logical reasoning to justify and prove mathematical statements.</p> <p>G.3C The student uses logical reasoning to prove statements are true and finds counter examples to disprove statements that are false.</p>	<ul style="list-style-type: none"> • Use counter-examples to prove statements true or false • Use examples and counter-examples that are mathematical and nonmathematical • Example: The statement “All right angles are congruent” is true. Is the converse also true? If not, provide an example. 	<p>Holt: 2.1</p>	<p>A&M: Ch 8 (Spring)</p>
<p>G.3 Geometric Structure. The student applies logical reasoning to justify and prove mathematical statements.</p> <p>G.3D The student uses inductive reasoning to formulate a conjecture.</p>	<ul style="list-style-type: none"> • Draw conclusions from number or picture patterns, specific examples, or events • Draw conclusions by using inductive reasoning to form conjectures 		
<p>G.5 Geometric Patterns. The student uses a variety of representations to describe geometric relationships and solve problems.</p> <p>G.5A The student uses numeric and geometric patterns to develop algebraic expressions representing geometric properties.</p>	<ul style="list-style-type: none"> • Patterns found in functional algebra 	<p>Discovering: 2.3</p>	
<p>G.3 Geometric Structure. The student applies logical reasoning to justify and prove mathematical statements.</p> <p>G.3E The student uses deductive reasoning to prove a statement.</p>	<ul style="list-style-type: none"> • Use facts, definitions, postulates, theorems, and properties to prove statements true or false • Use flow chart, paragraph proof, less of two-column proof 		<p>A&M: Ch 8 (Spring)</p>